

Remarks

The Drawings

The drawings are objected to because the reference numbers, as well as the Figure names, are unclear.

Replacement sheets (5 sheets), with the appropriate references to the application in the heading to the drawings, are included herewith. Since these are merely formal drawings that overcome the objections, no letter to the Draftsperson of the USPTO is included herewith.

Amendment to the Specification

Paragraph [0010] is replaced to correct a translation error. No new matter is added in this replacement paragraph.

Clarifications and Corrections in the ClaimsClaim Rejections Under 35 USC 112

Claims 1, 5, 10 and 11 are rejected under 35 USC 112 for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant notes that in claim 1, the expressions "first piston position" and "second piston position" have mistakenly been interchanged in the last part. This error has been corrected in amended claim 1. Obviously, the inlet chamber will decrease in volume if the displacement piston element is moved into its first position (from the second piston position), as in this first piston position the volume of the inlet chamber is minimized. This becomes clear from the overall disclosure of the present application.

The further clarity objection relating to original claim 5 is obviously based on errors which occurred when preparing the English translation. The correct wording of

claim 5 is reflected in paragraph [0010] of the English language description. Claim 5 has been amended accordingly.

Claims 10 and 11 are rejected for failing to have an appropriate antecedent basis for "the second valve arrangement". Claims 10 and 11 have been amended to recite "a" second valve arrangement.

Further, it is noted that in claims 2 and 7, translation errors have been corrected. Again, it is noted that in the description (paragraphs [0007] and [0008]) substantially correct wordings of these claims are reflected.

A further correction has been included in the amended claims. The wording of original claim 3 is now part of claim 1, and in the fourth line of original claim 3, the statement referring to a second piston region which is contained in the corresponding German language claim is completely missing. Again, it is to be noted that this change merely corrects the translation to maintain consistency with the German language claims, and the correct wording is reflected in the English language description in paragraph [0008].

Claim Rejections Under 35 USC 102

Claims 1, 2, 5-8, 10, 11 and 14 are rejected as being anticipated by Bair.

Claims 3 and 4 are rejected as being unpatentable over Bair in view of Bez.

Claim 9 is rejected as being unpatentable over Bair in view of Schuller.

Claims 12 and 13 are rejected as being unpatentable over Bair in view of Falk.

Applicant respectfully does not concur with the Examiner's interpretation of Bair. Stating that in Figure 4 of Bair the ports or apertures 107 and 109 provide the inlet chamber and the outlet chamber, respectively, and that member 30' is to be considered as

the displacement piston element would mean that by shifting the displacement piston element 30' a pumping action could not even occur, as obviously this member 30' is hollow and further, obviously, displacement of this member 30' within the space 101 does not lead to volume decrease. When reading Bair, it becomes clear the pumping action occurs due to a shifting movement of the pump operating rod 47' into and out of the pump chamber 64. The function of the apertures 107 and 109 and the member 30' is to selectively introduce pressurized fluid into the chamber 101 for acting on the working piston 21', which serves as a drive for the pumping portion. If, in Figure 4, this piston 21' and therefore also the rod portion 47' is pushed to the right side, then the volume of the chamber 64' and the volume of the chamber 101 increase. If members 21' and 47' are shifted to the left side, then the volumes of the chambers 64' and 101 are reduced, and therefore, the liquid contained in these chambers is pumped. When comparing this arrangement with the metering pump as defined in the claims, it first of all becomes clear that there does not exist a position in which the volume of one of the involved chambers is minimized and the volume of the other chamber is maximized, and vice versa. If the volume of chamber 64' is maximum, the volume of chamber 101' is also maximum, whereas if the volume of 64' is minimum, the volume of chamber 101' is also minimum. This is clearly in contradiction to the device as defined in claim 1 of the present invention. Further, this known pump obviously is not able to disclose displacement surfaces that are effective upon movement of the displacement piston in opposite directions, as defined in amended claim 1. Additionally, obviously this known device is not able to disclose a fluid supply duct that is provided in the displacement piston

element. Instead, fluid supply duct 16' is arranged in the housing containing the piston and is open to chamber 64'.

Therefore, Bair is not able to disclose or anticipate the metering pump as defined in amended claim 1.

Even the combination of Bair and Schuller, as referred to by the Examiner, is not able to disclose such an arrangement. First, it is to be noted that Bair and Schuller disclose such different constructions that Applicant respectfully believes that is not possible to combine these two teachings. If one tried to provide the piston 21', 47' of Bair with a central fluid supply duct, then obviously this device would not be operable, as there would be no possibility of providing a fluid communication between chambers 64' and 101 via such a central duct or bore in the piston, as disclosed in Schuller. Additionally, it is noted that even when trying to combine these features, obviously the resulting device could not disclose displacement surfaces that are operating in different, i.e., opposite, directions of movement. As noted above, Bair is only able to disclose such surfaces that are working in the same direction, whereas Schuller does not even disclose two chambers and associated displacement surfaces. Instead, the pump disclosed in Schuller only comprises a single displacement surface that is mainly provided by the free surfaces of member 56 and the free tip portion of the piston 34.

With respect to the further prior art documents, Applicant respectfully believes that they are even further away from the subject matter as defined in amended claim 1. Insofar as Falk is concerned, Applicant respectfully points out that it was published on September 28, 2004, after the filing date of the present application.

Therefore, Applicant respectfully believes the claims, as amended, are allowable.

Wherefore further consideration and allowance of the application as amended is respectfully requested.

Respectfully submitted,



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